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FEE TRANSMITTAL for FY 2005

Effective 10/01/2004. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$1030.00)

Complete if Known

Application Number	09/908,985
Filing Date	July 19, 2001
First Named Inventor	Hesson, David P.
Examiner Name	Qazi, Sabiha Naim
Art Unit	1616
Attorney Docket No.	358381-101

METHOD OF PAYMENT (check all that apply)

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 790	2001 395	Utility filing fee	
1002 350	2002 175	Design filing fee	
1003 550	2003 275	Plant filing fee	
1004 790	2004 395	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	

SUBTOTAL (1) (\$0.00)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** =	X	
Multiple Dependent	-3** =	X	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 88	2201 44	Independent claims in excess of 3
1203 300	2203 150	Multiple dependent claim, if not paid
1204 88	2204 44	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$0.00)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 430	2252 215	Extension for reply within second month	
1253 980	2253 490	Extension for reply within third month	
1254 1,530	2254 765	Extension for reply within fourth month	
1255 2,080	2255 1,040	Extension for reply within fifth month	
1401 340	2401 170	Notice of Appeal	500.00
1402 340	2402 170	Filing a brief in support of an appeal	
1403 300	2403 150	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,370	2453 685	Petition to revive - unintentional	
1501 1,370	2501 685	Utility issue fee (or reissue)	
1502 490	2502 245	Design issue fee	
1503 660	2503 330	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 790	2809 395	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 790	2810 395	For each additional invention to be examined (37 CFR 1.129(b))	
1801 790	2801 395	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$500.00)

SUBMITTED BY

(Complete if applicable)

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Signature		Date	April 11, 2005		

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/908,985
Filing Date	July 19, 2001
First Named Inventor	Hesson, David P.
Art Unit	1616
Examiner Name	Qazi, Sabiha Naim
Attorney Docket Number	358381-101

Total Number of Pages in This Submission

ENCLOSURES (Check all that apply)

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| <input type="checkbox"/> Response to Missing Parts/Incomplete Application | Appeal Brief, in triplicate | |
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Arthur E. Jackson, Reg. # 34,354
Signature	
Date	April 11, 2005

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In the United States Patent and Trademark Office

In re **Hesson et al.**

Serial No.: 09/908,985
Filing Date: July 19, 2001
For: **Kits and Compositions
Supporting Intracranial
Perfusions**

Docket No.: 358381-101

Art Unit: 1616
Examiner: Qazi, Sabiha Haim

BOARD OF PATENT APPEALS AND
INTERFERENCES

PATENT APPEAL

APPELLANT'S APPEAL BRIEF

04/14/2005 EFLORES 00000049 09908985

01 FC:1402 500.00 OP

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04/14/2005 EFLORES ~~00000024~~ 09908985

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On the Brief

Void date: 04/14/2005 EFLORES
04/14/2005 EFLORES 00000024 09908985
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(1) **Real Party in Interest**

The inventors have assigned their interest to Neuron Therapeutics, Inc., which in turn has assigned to Integra LifeSciences, Corporation. Accordingly, Integra LifeSciences is the real party in interest.

(2) **Related Appeals and Interferences**

On information and belief, there are no other appeals or interferences that will directly affect or have a bearing on the Board's decision in this Appeal.

(3) **Status of the Claims**

Claims 1, 3-32, 34-35, 37-40 and 51 are in the application. All other claims have been canceled. All of the pending claims are subject to one or more rejections under 35 U.S.C. §§103(a), 102(e) and 112, ¶2. Hence, claims 1, 3-32, 34-35, 37-40 and 51 are appealed.

(4) **Status of Amendments Filed After Final**

The Advisory Action dated March 10, 2005 listed that the amendments filed February 10, 2005 would be entered for purposes of appeal. Accordingly, the pending claims attached as Appendix A are as so amended.

Filed concurrently is an Amendment After Appeal that proposes to make the following simple change in the last clauses of claims 39 and 40: wherein the solution or kit is essentially lacking in glycine, glutamic acid and glutamine. The discussion below is framed without taking account of this proposed change.

(5) **Summary of Invention**

It has been known that certain poly-fluorinated compounds can be used to oxygenate neural tissue that has been damaged, such as by stroke. What was not known was that such oxygenating solutions can be more stably and reliably delivered as kits of pre-measured

constituent solutions. Claims 9 and 12, and claims dependent therefrom, recite particular partitions of the components into constituent compositions, partitions that are not disclosed or suggested in the cited art.

Certain claims (23-27 and 29-32) are to kits for making vehicle solutions without poly-fluorinated compound, or to combination fluorocarbon and vehicle kits (claim 28). The cited art does not disclose the usefulness of such vehicle, let alone suggest constituting vehicle in the claimed kits.

Certain claims (32 and 34-38) are to single compositions, which claims recite, among other things, a lack of glycine. Claim 39 and 40, also to single compositions, recite the presence of at least one citric acid, cis-aconitic acid, isocitric acid, succinic acid, fumaric acid, malic acid or oxaloacetic acid or a pharmaceutically acceptable salt thereof.

(6) Issues

The issues are:

- (i) **Issue 1:** Are claims 1, 3-32, 34-35, 37-40 and 51 unpatentable over Penska et al. ("Penska"), US 5,852,544 and Osterholm et al. ("Osterholm '691"), US 4,981,691?
- (ii) **Issue 2:** Are claims 1, 3-32, 34-35, 37-40 and 51 anticipated under 35 U.S.C. §102(e) by Osterholm '691?
- (iii) **Issue 3:** Are claims 1, 3-32, 34-35, 37-40 and 51 indefinite under 35 U.S.C. §112, ¶2?

(7) Grouping of claims

The rejections under 35 U.S.C. §§103(a) and 102(e) are not developed as to how one modifies the art to achieve the detailed combinations recited, or how Osterholm '691, which has no disclosure of kits or vehicle, anticipates, let alone anticipates detailed divisions of components into kits. The discussion below will demonstrate that the claims do not fall together.

(8) **Argument**

(i) **Rejection Under 35 U.S.C. §103**

All of the pending claims, claims 1, 3-32, 34-35, 37-40 and 51, are asserted to be rejected under 35 U.S.C. §103(a) as being unpatentable over Penska and Osterholm '691. The office action dated September 9, 2004 (the "Office Action") asserted that the prior art "teaches the *composition* used in the composition of claim 1." (Emphasis added.) Also, the Office Action asserted that it would have been obvious to one skilled in the art at the time of the invention to prepare the presently claimed invention because it is generically taught in the prior art.

As stated in MPEP 2143.01:

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Even if a given combination of references teach the individual elements of a claimed invention, the Court of Appeals of the Federal Circuit has repeatedly held that to support an obviousness rejection, the references must suggest the *desirability* of modification of the cited documents to produce the claimed invention. For instance, in In re Laskowski, the Federal Circuit held that the "mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the *desirability* of the modification." In re Laskowski, 871 F.2d 115, 117, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989) (citation omitted, emphasis added).

The Office Action does not inform Applicant of how the cited art teaches the motivation for or desirability of modifying the art to achieve the claimed invention. Accordingly, the rejection is in error and should be reversed.

For example, claim 1 is not and never was to a composition per se: it is to a kit of multiple compositions, 3 to 8, with pre-measured amounts of components that form a fluorocarbon nutrient emulsion, with the constituent compositions selected to provide stability. It is respectfully submitted that Penska has no disclosure or suggestion of a kit of such pre-

measured component compositions. It is respectfully submitted that Osterholm '695 has no disclosure or suggestion of a kit of such pre-measured component compositions. Nothing in the combination could reach such a suggestion.

Claims 9 and 12 enumerate the constituent compositions in more detail, in a way clearly not disclosed or suggested in Penska, or in Osterholm '691. Claims 4-7 and 19-21 recite multichambered bags with pressure release seams, something not disclosed or suggested in Penska, or in Osterholm '691.

Claims 23-27 are to kits with multiple component composition, pre-measured, that make a vehicle corresponding to the fluorocarbon nutrient emulsion, but lack the fluorocarbon. This aspect not disclosed or suggested in Penska, or in Osterholm '691. Claim 28 is to a kit of the vehicle kit, together with the nutrient emulsion kit, something not disclosed or suggested in Penska, or in Osterholm '691.

Claims 32 and 34-40 are to a single composition. But, as to claims 32 and 34-38, Osterholm '691 does not disclose or suggest a solution without glycine. As to claims 39 and 40, Osterholm '691 does not disclose or suggest the recited precursor (at least one citric acid, cis-aconitic acid, isocitric acid, succinic acid, fumaric acid, malic acid or oxaloacetic acid or a pharmaceutically acceptable salt thereof). Penska does not include meaningful disclosure about the relevant amino acid-related components.

A further recitation of claim elements not disclosed in Osterholm '691 is found in Section 8(ii) below. These elements are also not disclosed in Penska. The elements are further not suggested by either Penska or Osterholm '691.

Accordingly, the rejection is in error and should be reversed.

(ii) **Rejection Under 35 U.S.C. §102**

All of the pending claims, claims 1, 3-32, 34-35, 37-40 and 51, are asserted to be rejected under 35 U.S.C. §102(e), based on Osterholm '691. The Office Action asserted that Osterholm '691 discloses fluorocarbon, oxygenated solution, $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$, NaCO_3 , MgCl_2 , glucose, albumin, and amino acids, citing especially the abstract. Much of what is not disclosed

is implied by the above discussion in section 8(ii). Items not disclosed in the cited patent include:

- Kits, as claimed in claims 1, 3-21, 23-31 and 51;
- Vehicle solutions, as claimed in claims 23-32, 34-35, 37-40 and 51;
- A solution essentially lacking in glycine, as recited in claims 11, 32, 34-35 and 37-38;
- A solution comprising at least one of citric acid, cis-aconitic acid, isocitric acid, succinic acid, fumaric acid, malic acid or oxaloacetic (or salt thereof), as recited in claims 39 and 40;
- A kit with 3 to 4 constituent compositions, as claimed in claim 3;
- The use of 4 to 5 constituent compositions, as claimed in claim 51;
- Packaging in a multichambered bag, as claimed in claims 4-7 and 21;
- Provision of most of the constituent compositions in a multichamber bag, but use of an injection port for one, as claimed in claim 20;
- The divisions of constituent components into constituent compositions recited in claims 9 through 21;
- The selections for which constituent composition to load with particular individual components, as recited in claims 10, 11, 13-15 and 26-27;
- The selection of particular constituent compositions to initially provide in dry form, as recited in claim 16; and
- The provision of the amounts recited in claims 8, 22, 29 and 32.

Because of the many claimed features not found in the cited reference, the rejection should be reversed.

(iii) Rejection Under 35 U.S.C. §112, Second Paragraph

The claims stood rejected under 35 U.S.C. §112, paragraph 2, based on objections to the clarity of certain terms in the claims. It is believed that one or more of these rejections is

removed by the entry of the amendment mailed February 10, 2005. However, pending greater clarity in the record, the objected-to claims are discussed below.

As to "including", this term has been replaced with "comprising." A would submit "including" was clear, but made this amendment to expedite prosecution.

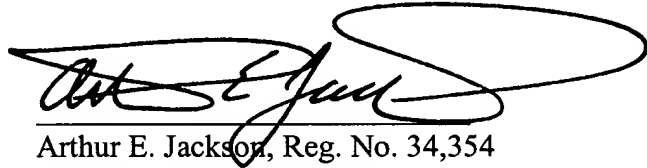
As to "amino acid precursors," first, Applicant respectfully would submit that those of skill in the nutritional arts know what these are. However, to accelerate prosecution, the term has been deleted where not needed and, substituted or defined by a more specific list elsewhere.

The phrase "in conjunction with the other components of the *solution*" in claim 1 was indeed in error. As shown in claims 9 and 12, the proper reference is to the fluorocarbon nutrient emulsion that will be formed from the components. Thus, the phrase now reads: in conjunction with the other components of the *fluorocarbon nutrient emulsion*. Those of skill will recognize that many components of the type used in nutrient solutions contribute to oncotic pressure. Thus, the recited component is the balancing additive over the other nutrient components. Applicant respectfully submits that there is no ambiguity.

Accordingly, Applicant respectfully submits that the rejection should be overturned, or the record clarified to denote that it is withdrawn.

CONCLUSION

For the foregoing reasons, Appellant respectfully requests that the rejections under 35 U.S.C. §§103(a), 102(3) and 112, ¶2 with respect to all of the pending claims, claims 1, 3-32, 34-35, 37-40 and 51, be reversed and the pending claims in the application allowed.

A handwritten signature in black ink, appearing to read 'Arthur E. Jackson', is written over a horizontal line.

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Dated: April 11, 2005



APPENDIX A - COPY OF CLAIMS ON APPEAL

1. **(Previously Amended)** A kit providing pre measured amounts of components to form a fluorocarbon nutrient emulsion capable of carrying oxygen to living tissue, the kit comprising:
three or more constituent solutions, emulsions or particle compositions, which are the constituent compositions, containing pre measured amounts of components for making the fluorocarbon nutrient emulsion, the constituent compositions comprising:
poly-fluorinated, oxygen carrying compound;
a physiologically acceptable emulsifying agent effective to emulsify the polymer;
a nutrient providing effective amount of carbohydrate;
nutrient providing effective amounts of amino acids;
an oncotic agent in amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure; and
sufficient salts and buffering agents to provide a physiological osmotic pressure and physiologically appropriate concentrations of potassium and sodium ions;
wherein constituent compositions are selected to allow for sufficient stability of the components to allow for commercial marketing of the kit, and wherein there are no more than eight constituent compositions.
2. **(Canceled).**
3. **(Original)** The kit of claim 1, wherein there are no more than four constituent compositions.
4. **(Original)** The kit of claim 1, wherein at least three of constituent compositions are packaged together in separate chambers of a multi chambered bag having pressure release seams separating the chambers, whereby pressure can be used to break the barriers between chambers to allow the contents to mix, wherein the contents mix to provide the appropriate concentrations.

5. **(Original)** The kit of claim 4, wherein the multi chambered bag, or the multi chambered bag together with a bag that envelops the multi chambered bag has an carbon dioxide permeability of 10 cc/m²•day•atm or less.

6. **(Original)** The kit of claim 4, wherein the multi chambered bag, or the multi chambered bag together with a bag that envelops the multi chambered bag has an carbon dioxide permeability of 1.0 cc/m²•day•atm or less.

7. **(Original)** The kit of claim 4, wherein the multi chambered bag, or the multi chambered bag together with a bag that envelops the multi chambered bag has an carbon dioxide permeability of 0.5 cc/m²•day•atm or less.

8. **(Original)** The kit of claim 1, wherein the constituent compositions are adapted to provide a fluorocarbon nutrient emulsion with the following component amounts:

Poly-Fluorinated, Oxygen-Carrying Compound, %v/v	9.5-10-5
Phospholipid, mg/mL	11.5
Albumin, g/dL,	1.67
α-Ketoglutaric Acid, µg/mL	25

Amino Acids, $\mu\text{g/mL}$	
L-Isoleucine+L-Leucine	17.5
L-Valine	16.6
L-Alanine	28.6
L-Serine	24.6
L-Histidine	10.3
L-Methionine	2.1
L-Phenylalanine+L-Lysine	35.3
L-Threonine+L-Arginine	48.3
L-Tyrosine	7.9
Na^+ , mM	147
K^+ , mM	2.9
Cl^- , mM	130
Ca^{+2} , mM	1.15
Mg^{+2} , mM	1.12
Glucose (dextrose), mg/dL	94

9. **(Original)** A kit providing pre measured amounts of components to form a fluorocarbon nutrient emulsion capable of carrying oxygen to living tissue, the kit comprising: constituent solutions, emulsions or particle compositions, which are the constituent compositions, containing pre measured amounts of components for making the fluorocarbon nutrient emulsion, the constituent compositions comprising:

- a first constituent composition comprising an emulsion of poly-fluorinated, oxygen carrying compound;
- a second constituent composition comprising a solution of sodium and potassium salts;
- a third constituent composition comprising a solution of a nutrient providing effective amount of glucose;
- a fourth constituent composition comprising a solution of an oncotic agent in amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure;
- a fifth constituent composition comprising solution of nutrient providing effective amounts of amino acids; and

a sixth constituent composition comprising a nutrient providing effective amount of α ketoglutaric acid.

10. **(Original)** The kit of claim 9, wherein the second constituent composition comprises one or both of calcium and magnesium salts.

11. **(Original)** The kit of claim 9, wherein the fifth constituent composition comprises nutrient providing effective amounts of arginine, histidine, leucine, lysine, methionine, phenylalanine, threonine and valine, and all of the components are essentially lacking in glutamic acid, glutamine and glycine.

12. **(Original)** A kit providing pre-measured amounts of components to form a fluorocarbon nutrient emulsion capable of carrying oxygen to living tissue, the kit comprising: constituent solutions, emulsions or particle compositions, which are the constituent compositions, containing pre measured amounts of components for making the fluorocarbon nutrient emulsion, the constituent compositions comprising:

a first constituent composition comprising an emulsion of poly-fluorinated, oxygen carrying compound;

a second constituent composition comprising a solution of sodium, potassium, magnesium and calcium salts;

a third constituent composition comprising a solution of oncotic agent in an amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure; and

a fourth constituent composition comprising solution of a nutrient providing effective amounts of amino acids,

wherein either the second constituent composition comprises a nutrient providing effective amount of glucose or the kit comprises a fifth constituent composition comprising a nutrient providing effective amount of glucose.

13. **(Original)** The kit of claim 12, wherein the first constituent composition comprises a nutrient providing effective amount of α ketoglutaric acid.
14. **(Original)** The kit of claim 12, wherein the fourth constituent composition comprises a nutrient providing effective amount of α ketoglutaric acid.
15. **(Original)** The kit of claim 12, wherein the second constituent composition comprises a nutrient providing effective amount of glucose.
16. **(Original)** The kit of claim 15, wherein one or more of the second and fourth constituent compositions is in dried form adapted to be diluted in a pre-determined amount of water prior to use.
17. **(Original)** The kit of claim 12, wherein the kit comprises the fifth constituent composition.
18. **(Previously Amended)** The kit of claim 17, wherein one or more of the second, fourth and fifth constituent compositions is in dried form adapted to be diluted in a pre-determined amount of water prior to use.
19. **(Original)** The kit of claim 12, wherein at least the first, second and fourth constituent compositions are packaged together in separate chambers of a multi chambered bag having pressure release seams separating the chambers, whereby pressure can be used to break the barriers between chambers to allow the contents to mix, wherein the contents mix to provide the appropriate concentrations.

20. **(Original)** The kit of claim 19, wherein the multichambered bag has an injection port through which the third constituent composition can be injected to complete the fluorocarbon nutrient emulsion.

21. **(Original)** The kit of claim 12, wherein the first, second, third and fourth constituent compositions are packaged together in separate chambers of a multi chambered bag having pressure release seams separating the chambers, whereby pressure can be used to break the barriers between chambers to allow the contents to mix, wherein the contents mix to provide the appropriate concentrations.

22. **(Original)** A fluorocarbon nutrient emulsion with the following component amounts:

Poly-Fluorinated, Oxygen-Carrying Compound, %v/v	9.5-10-5
Albumin, g/dL,	1.67
α -Ketoglutaric Acid, $\mu\text{g/mL}$	25
Amino Acids, $\mu\text{g/mL}$	
L-Isoleucine+L-Leucine	17.5
L-Valine	16.6
L-Alanine	28.6
L-Serine	24.6
L-Histidine	10.3
L-Methionine	2.1
L-Phenylalanine+L-Lysine	35.3
L-Threonine+L-Arginine	48.3
L-Tyrosine	7.9
Na^+ , mM	147
K^+ , mM	2.9
Cl^- , mM	130
Ca^{+2} , mM	1.15
Mg^{+2} , mM	1.12
Glucose (dextrose), mg/dL	94

23. **(Previously Amended)** A vehicle kit providing pre measured amounts of components to form a vehicle corresponding to a fluorocarbon nutrient emulsion formed from a corresponding

fluorocarbon nutrient emulsion kit, the corresponding fluorocarbon nutrient emulsion kit comprising constituent solutions, emulsions or particle compositions, which are the first constituent compositions, containing pre measured amounts of components for making the fluorocarbon nutrient emulsion, the first constituent compositions made up of:

- (a) poly-fluorinated, oxygen carrying compound;
- (b) a phospholipid emulsifying agent effective to emulsify the poly-fluorinated, oxygen carrying compound, wherein the poly-fluorinated, oxygen carrying compound and the phospholipid emulsifying agent are supplied in one first constituent composition wherein the poly-fluorinated, oxygen carrying compound is emulsified by the phospholipid emulsifying agent, this emulsified poly-fluorinated, oxygen carrying compound composition providing a portion of sodium or potassium ions of the fluorocarbon nutrient emulsion;
- (c) a nutrient providing effective amount of carbohydrate;
- (d) nutrient providing effective amounts of amino acids;
- (e) an oncotic agent in amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure; and
- (f) sufficient salts and buffering agents to provide a physiological osmotic pressure and physiologically appropriate concentrations of potassium and sodium ions;

the vehicle kit essentially free of poly-fluorinated, oxygen carrying compound and comprising the following separate vehicle kit compositions:

- all the first constituent compositions but the emulsified poly-fluorinated, oxygen carrying compound composition; and
- supplement constituent compositions comprising one or more components effective to supply the sodium or potassium ions that would be provided by the emulsified poly-fluorinated, oxygen carrying compound composition.

24. **(Original)** The vehicle kit of claim 23, wherein the vehicle kit compositions of the corresponding fluorocarbon nutrient emulsion kit comprise:

- (1) a first constituent composition comprising an emulsion of poly-fluorinated, oxygen carrying compound;
- (2) a first constituent composition comprising a solution of sodium, potassium, magnesium and calcium salts;
- (3) a first constituent composition comprising a solution of a nutrient providing effective amount of glucose;
- (4) a first constituent composition comprising a solution of an oncotic agent in amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure;
- (5) a first constituent composition comprising a solution of nutrient providing effective amounts of amino acids; and
- (6) a first constituent composition comprising a nutrient providing effective amount of α ketoglutaric acid,

whereby the vehicle kit compositions comprise first constituent compositions (2) through (6) and at least one supplement constituent composition.

25. **(Original)** The vehicle kit of claim 23, wherein the vehicle kit compositions of the corresponding fluorocarbon nutrient emulsion kit comprise:

- (1) a first constituent composition comprising an emulsion of poly-fluorinated, oxygen carrying compound;
- (2) a first constituent composition comprising a solution of sodium, potassium, magnesium and calcium salts;
- (3) a first constituent composition comprising a solution of the oncotic agent in amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure; and

(4) a first constituent composition comprising a solution of a nutrient providing effective amounts of amino acids, whereby the vehicle kit compositions comprise first constituent compositions (2) through (4) and at least one supplement constituent composition.

26. **(Original)** The vehicle kit of claim 23, wherein the supplement constituent compositions are effective to supply the α ketoglutaric acid that would be provided by the emulsified poly-fluorinated, oxygen carrying compound composition.

27. **(Original)** The vehicle kit of claim 23, wherein the supplement constituent compositions are effective to supply the phospholipid emulsifying agent that would be provided by the emulsified poly-fluorinated, oxygen carrying compound composition.

28. **(Original)** A kit for use in delivering a fluorocarbon nutrient emulsion comprising (a) the vehicle kit of claim 23 and (b) the corresponding fluorocarbon nutrient emulsion kit.

29. **(Original)** The vehicle kit of claim 23, wherein vehicle kit compositions and supplement and one or more supplement compositions adapted to provide a vehicle solution with the following component amounts:

Albumin, g/dL,	1.67
α -Ketoglutaric Acid, $\mu\text{g/mL}$	25

Amino Acids, $\mu\text{g/mL}$	
L-Isoleucine+L-Leucine	17.5
L-Valine	16.6
L-Alanine	28.6
L-Serine	24.6
L-Histidine	10.3
L-Methionine	2.1
L-Phenylalanine+L-Lysine	35.3
L-Threonine+L-Arginine	48.3
L-Tyrosine	7.9
Na^+ , mM	147
K^+ , mM	2.9
Cl^- , mM	130
Ca^{+2} , mM	1.15
Mg^{+2} , mM	1.12
Glucose (dextrose), mg/dL	94

30. **(Original)** The vehicle kit of claim 23, adapted to provide a vehicle solution with the following further component amount:

Phospholipid, mg/mL 11.5.

31. **(Original)** The vehicle kit of claim 23, comprising:

a first vehicle kit composition comprising a solution of (i) sodium, potassium, magnesium and calcium salts, (ii) a nutrient providing effective amount of α -ketoglutaric acid, and (iii) a nutrient providing effective amounts of amino acids;

a second vehicle kit composition comprising a solution of the oncotic agent in amount effective to provide, in conjunction with the other components of the fluorocarbon nutrient emulsion, a physiologically acceptable oncotic pressure; and

a third vehicle kit composition comprising a solution of a nutrient providing effective amount of glucose.

32. **(Previously Amended)** A vehicle solution consisting essentially of the following component amounts:

Albumin, g/dL,	1.67
α -Ketoglutaric Acid, $\mu\text{g/mL}$	25
Amino Acids, $\mu\text{g/mL}$	
L-Isoleucine+L-Leucine	17.5
L-Valine	16.6
L-Alanine	28.6
L-Serine	24.6
L-Histidine	10.3
L-Methionine	2.1
L-Phenylalanine+L-Lysine	35.3
L-Threonine+L-Arginine	48.3
L-Tyrosine	7.9
Na^+ , mM	147
K^+ , mM	2.9
Cl^- , mM	130
Ca^{+2} , mM	1.15
Mg^{+2} , mM	1.12
Glucose (dextrose), mg/dL	94

33. **(Canceled).**

34. **(Previously Amended)** A fluorocarbon nutrient emulsion capable of carrying oxygen to living tissue or a kit of pre measured components for such a solution, the solution or kit comprising:

a poly-fluorinated, oxygen carrying compound;

a physiologically acceptable emulsifying agent effective to emulsify the poly-fluorinated, oxygen carrying compound; and

nutrient providing effective amounts of amino acids or one or more amino acid precursors selected from citric acid, cis-aconitic acid, isocitric acid, α ketoglutaric acid, succinic acid, fumaric acid, malic acid and oxaloacetic

acid, wherein the solution or kit is essentially lacking in glutamic acid, glutamine and glycine.

35. **(Original)** The fluorocarbon nutrient emulsion or kit of claim 34, further comprising a nutrient providing effective amount of carbohydrate.

36. **(Canceled).**

37. **(Previously Amended)** A nutrient solution or a kit of pre measured components for such a solution, the solution or kit comprising:

a nutrient providing effective amount of carbohydrate;

an oncotic agent in amount effective to provide, in conjunction with the other

components of the solution, a physiologically acceptable oncotic pressure;

and

nutrient providing effective amounts of amino acids comprising arginine,

histidine, leucine, isoleucine, lysine, methionine, phenylalanine, threonine

and valine, wherein the solution or kit is essentially lacking in glutamic

acid, glutamine and glycine.

38. **(Original)** The nutrient emulsion or kit of claim 37, wherein the nutrient providing effective amounts of amino acids or amino acid precursors comprise a nutrient providing effective amount of α ketoglutaric acid or a pharmaceutically acceptable salt thereof.

39. **(Previously Amended)** A fluorocarbon nutrient emulsion capable of carrying a oxygen to living tissue or a kit of pre measured components for such a solution, the solution or kit comprising:

a poly-fluorinated, oxygen carrying compound;

a physiologically acceptable emulsifying agent effective to emulsify the poly-

fluorinated, oxygen carrying compound; and

nutrient providing effective amounts of amino acids or amino acid precursors, comprising at least one citric acid, cis-aconitic acid, isocitric acid, succinic acid, fumaric acid, malic acid or oxaloacetic acid or a pharmaceutically acceptable salt thereof, wherein the solution or kit is essentially lacking in glutamic acid and glutamine.

40. **(Previously Amended)** A nutrient solution or a kit of pre measured components for such a solution, the solution or kit comprising:

a nutrient providing effective amount of carbohydrate;

an oncotic agent in amount effective to provide, in conjunction with the other components of the solution, a physiologically acceptable oncotic pressure; and

nutrient providing effective amounts of amino acids or amino acid precursors comprising arginine, histidine, leucine, isoleucine, lysine, methionine, phenylalanine, threonine, valine, and at least one of citric acid, cis-aconitic acid, isocitric acid, succinic acid, fumaric acid, malic acid or oxaloacetic acid or a pharmaceutically acceptable salt thereof, wherein the solution or kit is essentially lacking in glutamic acid and glutamine.

41-50. **(Canceled)**.

51. **(Previously Presented)** The kit of claim 1, wherein there are four or five constituent compositions.

52. **(Canceled)**.